



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Application for Patent

Applicant(s): Evan S. Huang
Title: Method and Apparatus for Utilizing Document Type Definition
To Generate Structured Documents
Serial No.: 09/754,969
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Examiner: William L. Bashore
Group Art Unit: 2176
Docket No: 2276-02

APPEAL BRIEF

November 1, 2003

CERTIFICATE OF MAILING

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Signed:


Joe Zheng

TABLE OF CONTENTS

	<u>Page No.</u>
I. REAL PARTY IN INTEREST	1
II. RELATED APPEALS AND INTERFERENCES	1
III. STATUS OF CLAIMS	1
IV. STATUS OF AMENDMENTS	1
V. SUMMARY OF INVENTION	1
VI. ISSUES	3
VII. GROUPING OF CLAIMS	4
VIII. ARGUMENT	4
XI. CONCLUSION	9
X. APPENDIX	11

I. REAL PARTY IN INTEREST

XMLCities, Inc. of 1617A S. Main Street, Milpitas, CA 95035

II. RELATED APPEALS AND INTERFERENCES

None

III. STATUS OF THE CLAIMS

On September 8, 2003, the Appellant appealed from the final rejections of Claim 1-3, 5-27 and 29-42 that are rejected under 35 USC 103(a) as being unpatentable over Kuwahara (US Pat. No.: 6,202,072) in view of Arn et al (PCT Application Publication No.: WO 94/14122), both references will be referred to as Kuwahara and Arn hereinafter.

IV. STATUS OF AMENDMENTS

Claims 1-42 were initially filed.

In responding to First Office Action dated 07/03/2001, amendments were made to Title, Specification and Claims 1, 2, 15, 25, 26 and 36;

In responding to Final Office Action dated 09/11/2001, no amendments were made;

In responding to an interview 03/28/2002, preliminary amendments (RCE) were made to Claims 1-5, 8, 12, 15-17, 25-29, 36 and 39-41;

In responding to First Office Action (RCE) dated 05/01/2002, claims 4 and 28 were cancelled, amendments were made to Claims 1-2, 5-6, 9, 11, 15-16, 18-22, 25-26, 29-30, 33 and 39-40. As a result, Claims 1-3, 5-27, and 29-42 are pending;

In responding to Second (Final) Action (RCE) dated 10/24/2002, no amendments were made;

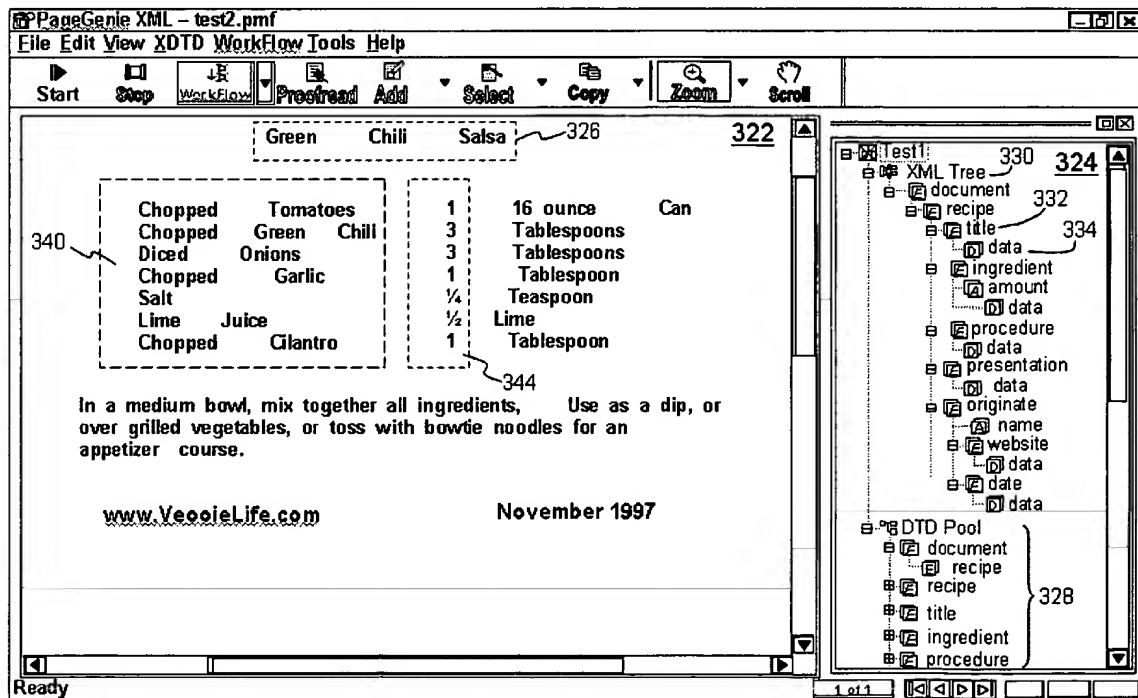
In responding to Third Office Action (RCE) dated 01/21/2003 (Finality of Second Office Action was withdrew), amendments were made to Claims 1, 15-16, 25, and 39; and

In responding to Final Action (RCE) dated 05/08/2003, no amendments were made.

V. SUMMARY OF INVENTION

The invention relates to techniques for producing a structured document from an unstructured document. A structured document is referred to those in a markup language such as HyperText Markup Language (HTML), Extensible Markup Language (XML), Standard Generalized Markup Language (SGML) or Wireless Markup Language (WML). An unstructured document is those that have been converted with specific DTD (document type definitions) from a structured or unstructured document. An example of unstructured documents is PDF that is commonly used across different operating systems and the Internet. FIG. 2C and FIG. 2A in the Application show respectively a structured document and an unstructured document.

The structured document includes information/instructions to instruct an application (e.g., a browser) how to present the contents in the document, such as fonts, color and size. An unstructured document such as PDF is an output representation that no longer has the information/instructions. According to one embodiment of the present invention, it is a method for producing a structured document from an unstructured document. In referring to the following figure that is



a replication of FIG. 3B of the application, the method comprises receiving a definition file including document type definitions (DTD) (328) to generate a tree structure (330) of hierarchical relationships of document elements (e.g., (332) or (334)), displaying an output presentation (322) along with the DTD (328) and the tree structure (330) simultaneously, the output presentation (322) including a number of displayable objects (e.g., referenced by (326), (340) and (344)) and respective decoration attributes (e.g., color, font or size) about each of the displayable objects, the DTD (328) showing structures of the document elements and the tree structure (330) showing the hierarchical relationships of the document elements based on a root element (e.g., "document") selected among the document elements (e.g., "receipt" or "title").

To link the output presentation (322) with the tree structure (330), the method further comprises associating at least one of the document elements in the tree structure with one of the displayable objects by an identifier, for example, a displayable object (326) associated with a document element (332) by an identifier "2", and finally creating the structured document from the output presentation in accordance with the at least one of the document elements being associated with the one of the displayable objects. As a result, a structured document (e.g., in XML) is created.

One of the important features of this invention is not to alter the original DTD (328) by creating a working tree structure (330) generated from the original DTD (328). It is well known in the art that any changes to DTD (328) would result in undesirable effects to the output presentation (322) of the unstructured document.

VI. ISSUES

The issues which Applicants believe to be most pertinent to the present appeal include:

whether the Examiner failed to establish a *prima facie* case of obviousness. It is respectfully believed that the Final Action as well as the Advisory Action failed to consider each recited elements in claim 1, 15, 25 and 39, did not show how each element is taught in the cited references, whereas the cited references were interpreted beyond necessary support. The Actions

also failed to consider the recited limitations in the various dependent claims that were rejected based on non-related parts in the cited references.

VII. GROUPING OF CLAIMS

With respect to the issue presented above, the rejected claims do not stand or fall together. Claim 1 will be argued individually together with corresponding dependent claims, Claim 15 will be argued individually together with corresponding dependent claims, and the remaining claims will be argued as a group.

VIII. ARGUMENT

To facilitate the understanding of the arguments herein, the above inserted figure (i.e., FIG. 3B of the application) on page 4 will be referred to. Reference numbers are to be inserted in parenthesis () after essential elements in the claims in view of the inserted figure. However, such association to the figure does not in any way intend to limit the scope of the claims in discussion.

PATENTABILITY OF CLAIM 1

It is axiomatic that an invention in a patent application is defined by, and must be examined with respect to, the specific language of the claims. Claim 1 is set forth below with the specific features underlined:

receiving a definition file including document type definitions (DTD) to generate a tree structure of hierarchical relationships of document elements;
displaying an output presentation along with the DTD and the tree structure simultaneously, the output presentation including a number of displayable objects and respective decoration attributes about each of the displayable objects, the DTD showing structures of the document elements and the tree structure showing the hierarchical relationships of the document elements based on a root element selected among the document elements;
associating at least one of the document elements in the tree structure with one of the displayable objects; and
creating the structured document from the output presentation in accordance with the at least one of the document elements being associated with the one of the displayable objects.

(emphasis added)

As described between lines 25 of page 18 to line 5 of page 19 and FIG. 3B in the Specification, when a DTD (Pool) (328) is loaded in FIG. 3B, an (XML) tree structure (330) is generated or derived from the DTD (328) and subsequently shows the hierarchical relationships of the document elements. The document elements in the tree structure (330), as shown in FIG. 3B, include document, receipt, title, and etc. Likewise, the DTD (328) also is shown to include similar document elements.

As recited in Claim 1, Appellant wishes to point out that the tree structure (330) is generated based on a root element. In other words, the tree structure (330) is formed with reference to a root element ("document" is used as the root element in FIG. 3B) and it is the tree structure 330 that is used to facilitate the association of the displayable objects such as (326), (340) and (344) in display (322) with the document elements in the tree structure (330). In contrast, it is shown in *FIG. 2 of Kuwahara* that the "relevant" actions are taken with the DTD file directly. More distinctly, there are three items being displayed as recited in Claim 1: an output presentation (322), a DTD (328) and a derived tree structure (330). *Kuwahara neither teaches nor suggests the display of the three items.*

In lines 8-9 on page 3 of the Final Office Action dated 05/08/2003, the Examiner agrees that "Kuwahara does not specifically teach displaying to a user Kuwahara's simultaneous depiction of the diagram of Figure 2". In any case, Figure 2 of Kuwahara shows only two related items "Prototype of Plain Text Document" and "Document Type Definition"(i.e., DTD). The middle item "Correlation" is an underlying relationship. It is evident Kuwahara works on the DTD directly.

Kuwahara receives a DTD but fails to teach or suggest to generate a tree structure from the DTD. Further, Kuwahara shows in Figure 2 that the correlation is performed directly on the DTD, which teaches away from "*associating at least one of the document elements in the tree structure with one of the displayable objects*". In spite to the difference in operation between the claimed invention and Kuwahara, the Examiner, in lines 2-5 on page 9 of the Final Office Action, characterizes the DTD in Figure 2 of Kuwahara as both a DTD and a derived tree structure ("a tree structure within a DTD"). The Applicant respectfully disagrees with such characterization by the Examiner. There is no evidence in the record of any suggestion to view a DTD as two items as recited in Claim 1. The Examiner's posited rationale is believed to be that a

DTD includes a tree structure and therefore could be viewed as a DTD and a derived tree structure, which clearly contradicts what is intended in Kuwahara or recited in Claim 1.

The Examiner states in the Interview Summary (paragraph 3 of the continuation sheet) that *"the DTD and tree structure of Applicant's disclosure Figure 3B (right panel) is reflective of two branches off a main root (Test 1), therefore, both said items are branches of a single tree structure"*. Evidently, the Examiner is in denial of or overlooked the fact that the tree structure (330) of FIG. 3B, even if it is a branch of a single tree structure, is generated from the DTD (328) of FIG. 3B as recited in Claim 1. Furthermore, as clearly described between line 25 of page 18 and line 15 of page 19, the tree structure (330) of FIG. 3B is produced from the DTD (328) and used to associate with the displayable objects in (322).

It is respectfully pointed out that the generated tree structure (330) is used to associate with the displayable objects (e.g., (326), (340) and (344) in (322)). It is understood to those skilled in the art that, when such association is done, the data or file representing the tree structure will be altered to include the association (e.g., the identifiers). It is well known in the art that a DTD file should not be altered by adding things that are not related to the purpose of a DTD, or a presentation would be wrong. A very well-known example in patent community are the DTD files provided by USPTO for electronic filing, such DTD files can not be altered (actually not be permitted), otherwise the view of a filed application would be different or in undesirable format. That is why, in Claim 1, it recites that a separate tree structure is generated from the DTD. It is the generated tree that is used to be associated with the displayable objects in the output representation (322). In any case, neither Kuwahara nor Arn has taught or suggested "document type definitions (DTD) to generate a tree structure of hierarchical relationships of document elements".

The Appellant respectfully submits that the rejection of Claim 1 under 35 USC 103(a) is improper. Additional features recited in dependent claims are not to be further addressed as the combined features Claim 1 are sufficiently distinct from the cited references view along or in combination. Accordingly, it is believed that Claims 1-3 and 5-14 shall be allowable over the cited references.

PATENTABILITY OF CLAIM 15

Claim 15 includes distinct features that are neither taught nor suggested in Kuwahara or Arn, viewed alone or in combination. In particular, Claim 15 recites “the second display displaying a definition file including document type definitions (DTD) and a tree structure showing hierarchical relationships among document elements, the tree structure derived from the DTD and based on a root element selected among the document elements”, which means both a DTD (328) and a tree structure (330) are displayed at the same time. Further it recites relevant actions take place with the tree structure (not the DTD) by “associating each of the group objects with the identifier in one of the document elements of the tree structure (330); and creating the structured document from the output presentation in accordance with the at least one of the document elements of the tree structure (330) being associated with the one of the displayable objects”. *(emphasis added)* It is respectfully reminded again that Kuwahara teaches away from the feature as it is shown in Figure 2 of Kuwahara that the “relevant” actions are taken directly with the DTD file. Accordingly, it is believed that Claims 15-24 shall be allowable over the cited references.

PATENTABILITY OF CLAIM 25 and 39

Independent Claims 25 and 39 are computer program product claims, mirroring the preceding method claims. The Examiner rejects the Claims 25 and 39 and the corresponding dependent claims 26 – 27, 29- 38 and 40 - 42 using the similar reasons. Hence, the Applicant respectfully requests that the Examiner reconsider Claims 25 and 39 and their respective corresponding dependent claims in view of the remarks presented in the foregoing.

XI. CONCLUSION

The Examiner is believed to have failed to set forth a *prima facie* case of obviousness. It is the burden of the examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the cited references, or by implications contained in such teachings or suggestions. In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). “Additionally, when determining obviousness, the claimed invention

should be considered as a whole; there is no legally recognizable 'heart' of the invention." The Examiner states "observes that the DTD and tree structure of Applicant's disclosure FIGure 3B (right panel) is reflective of two branches off a main root (Test1), therefore, both said items are branches of a single tree structure." It respectfully believed that the Examiner provides a broad unsupported general conclusion of obviousness. Pending claims recite clearly that the tree structure is generated from the DTD. The two separate items displayed to a main root is just a preference of display. There is no requirement in the invention that these two items must be off a main root (Test1).

To facilitate the understanding of the specific features recited in the independent claims (e.g., Claim 1), it is summarized herein that the tree structure (330) possesses the following characteristics: 1) generated from a DTD; 2) based on a root element selected among the document elements; 3) displayed simultaneously with the DTD; and 4) used to associate with the displayable objects. The Examiner is respectfully challenged to compare these features with that of Kuwahara and Arn. The Appellant respectfully submits neither Kuwahara nor Arn, viewed alone or in combination, have taught or suggested the features in the pending claims.

In view of the foregoing, it is respectfully submitted that the combined features in Claims 1-3, 5-27, and 29-42 are neither taught nor suggested in Kuwahara and Arn, viewed alone or in combination. Accordingly, the pending rejections of all of the claims under 35 USC 103(a) by the Examiner should be reversed.

Respectfully Submitted,

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X. APPENDIX

CLAIMS ON APPEAL

1. *(Previously amended)* A method for producing a structured document, the method comprising:
 - receiving a definition file including document type definitions (DTD) to generate a tree structure of hierarchical relationships of document elements;
 - displaying an output presentation along with the DTD and the tree structure simultaneously, the output presentation including a number of displayable objects and respective decoration attributes about each of the displayable objects, the DTD showing structures of the document elements and the tree structure showing the hierarchical relationships of the document elements based on a root element selected among the document elements;
 - associating at least one of the document elements in the tree structure with one of the displayable objects; and
 - creating the structured document from the output presentation in accordance with the at least one of the document elements being associated with the one of the displayable objects.
2. *(previously amended)* The method of claim 1 further comprising:
 - generating a modified output presentation that includes the displayable objects, each of the displayable objects being modified in accordance with the at least one of the document elements in the tree structure.
3. *(previously amended)* The method of claim 2 further comprising converting the output presentation to a markup language file in accordance with a set of mapping rules.
4. *(Cancelled)*
5. *(previously amended)* The method of claim 1, wherein some of the document elements include another layer of sub-document elements, each of sub-document elements corresponds to one of the displayable objects in the output presentation.

6. *(previously amended)* The method of claim 1, wherein at least some of the document elements include respectively a number of identifiers, each of the identifiers being assigned to one of the at least some of the document elements.
7. *(no change)* The method of claim 6, wherein some of the identifiers are one or more of numerals and alphabets.
8. *(previously amended)* The method of claim 6, wherein some of the identifiers are selected from a group consisting of a font type, a color name, a size, a style, and an effect.
9. *(previously amended)* The method of claim 6, wherein the associating of the at least one of the document elements in the tree structure with one of the displayable objects comprises:
selecting one of the displayable objects; and
assigning one of the identifiers to the selected display object.
10. *(no change)* The method of claim 9, wherein the one of the identifiers is either a numeral or an alphabet.
11. *(previously amended)* The method of claim 10, wherein the one of the identifiers is one or more of (i) a font type, (ii) a color, (iii) a size, (iv) a style, and (v) an effect.
12. *(previously amended)* The method of claim 1, wherein the output presentation is or is produced from an unstructured document that is composed, edited or managed by an authoring tool.
13. *(no change)* The method of claim 12, wherein some of the displayable objects are respective groups of characters.

14. *(no change)* The method of claim 13, wherein some of the decoration attributes include at least positions, font color, font size, font type, style, and effect for each of the groups of characters.

15. *(previously amended)* A method for producing a structured document, the method comprising:

activating an environment including a first display and a second display, the first display displaying an output presentation and the second display displaying a definition file including document type definitions (DTD) and a tree structure showing hierarchical relationships among document elements, the tree structure derived from the DTD and based on a root element selected among the document elements, each of the document elements including an identifier, wherein the output presentation including a number of displayable objects and respective decoration attributes about each of the displayable objects;

forming a number of group objects, each of the group objects including one or more of the displayable objects; and

associating each of the group objects with the identifier in one of the document elements of the tree structure; and

creating the structured document from the output presentation in accordance with the at least one of the document elements of the tree structure being associated with the one of the displayable objects.

16. *(previously amended)* The method of claim 15 further comprising generating a modified output presentation including information of each of the group objects being associated with the identifier in one of the document elements.

17. *(previously amended)* The method of claim 16 further comprising: converting the modified output presentation to a markup language file in accordance with mapping rules.

18. *(previously amended)* The method of claim 17, wherein the markup language file is suitable for presentation on a selected media.

19. (*previously amended*) The method of claim 18, wherein the selected media is a web presentation on the Internet.

20. (*previously amended*) The method of claim 18, wherein the markup language file is based on a markup language selected from a group consisting of HyperText Markup Language (HTML), compact HyperText Markup Language (cHTML), Extensible Markup Language (XML), Standard Generalized Markup Language (SGML) or Wireless Markup Language (WML).

21. (*previously amended*) The method of claim 15, wherein some of the decoration attributes include at least position, font type, color, size, style, and effect for each of the groups of characters.

22. (*previously amended*) The method of claim 21, wherein some of the displayable objects are respective groups of characters.

23. (*no change*) The method of claim 22, wherein the identifier is one or more of a numeral and an alphabet.

24. (*no change*) The method of claim 23, wherein the identifier is one or more of (i) a font type, (ii) a color, (iii) a size, (iv) a style, and (v) an effect.

25. (*Currently amended*) A machine-readable medium embodying instructions for execution by a processor, the instructions, when executed by the processor, causing the processor to produce a structured document, the machine-readable medium comprising:

 program code for receiving a definition file including document type definitions (DTD) to generate a tree structure of hierarchical relationships of document elements;

 program code for displaying an output presentation along with the DTD and the tree structure simultaneously, the output presentation including a number of displayable objects and respective decoration attributes about each of the

displayable objects, the DTD showing structures of document elements and the tree structure showing the hierarchical relationships of document elements based on a root element selected among the document elements;
program code for associating at least one of the document elements in the tree structure with one of the displayable objects; and
program code for creating the structured document from the output presentation in accordance with the at least one of the document elements being associated with the one of the displayable objects.

26. *(previously amended)* The machine-readable medium of claim 25 further comprising:

program code for generating a modified output presentation that includes the displayable objects, each of the displayable objects being modified in accordance with the at least one of the document elements in the definition file.

27. *(previously amended)* The machine-readable medium of claim 25 further comprising program code for converting the modified output presentation to a markup language file in accordance with a set of mapping rules.

28. *(Cancelled)*

29. *(previously amended)* The machine-readable medium of claim 25, wherein some of the document elements include another layer of sub-document elements, each of sub-document elements corresponds to one of the displayable objects in the output presentation.

30. *(previously amended)* The machine-readable medium of claim 25, wherein at least some of the document elements include respectively a number of identifiers, each of the identifiers being assigned to one of the at least some of the document elements.

31. (no change) The machine-readable medium of claim 30, wherein some of the identifiers are one of either numerals or alphabets.

32. (no change) The machine-readable medium of claim 30, wherein some of the identifiers are selected from a group consisting of a font type, a color, a size, a style, and an effect.

33. (previously amended) The machine-readable medium of claim 30, wherein the program code for associating the at least one of the document elements comprises:

program code for selecting one of the displayable objects; and

program code for assigning one of the identifiers to the selected display object.

34. (no change) The machine-readable medium of claim 33, wherein the one of the identifiers is one or more of a numeral and an alphabet.

35. (no change) The machine-readable medium of claim 34, wherein the one of the identifiers is one or more of (i) a font type, (ii) a color, (iii) a size, (iv) a style, and (v) an effect.

36. (previously amended) The machine-readable medium of claim 25, wherein the output presentation is or is generated from an unstructured document that is composed, edited or managed by an authoring tool.

37. (no change) The machine-readable medium of claim 36, wherein some of the displayable objects are respective groups of characters.

38. (no change) The machine-readable medium of claim 37, wherein some of the decoration attributes include at least position, font type, color, size, style, and effect for each of the groups of characters.

39. (Currently amended) A machine-readable medium embodying instructions for execution by a processor, the instructions, when executed by the processor, causing

the processor to produce a structured document, the machine-readable medium comprising:

program code for activating an environment including a first display and a second display, the first display displaying an output presentation and the second display displaying a definition file including document type definitions (DTD) and a tree structure showing hierarchical relationships among document elements, the tree structure derived from the DTD and based on a root element chosen from the document elements selected among the document elements, each of the document elements including an identifier, wherein the output presentation including a number of displayable objects and respective decoration attributes about each of the displayable objects;

program code for forming a number of group objects, each of the group objects including one or more of the displayable objects;

program code for associating each of the group objects with the identifier in one of the document elements of the tree structure; and

program code for creating the structured document from the output presentation in accordance with the at least one of the document elements of the tree structure being associated with the one of the displayable objects.

40. *(previously amended)* The machine-readable medium of claim 39 further comprising program code for generating a modified output presentation including information of each of the group objects being associated with the identifier in one of the document elements.

41. *(previously amended)* The machine-readable medium of claim 40 further comprising program code for converting the modified output presentation to a markup language file in accordance with mapping rules.

42. *(no change)* The method of claim 39 wherein some of the decoration attributes include at least position, font type, color, size, style, and effect for each of the groups of characters and wherein some of the displayable objects are respective groups of characters.